

**IN THE CLAIMS:**

1. (Currently Amended) A superconducting resistive current limiter adapted for a nominal voltage  $U_N$  and carrying a nominal current  $I_N$  at a working temperature  $T_N$ , with at least one track (1) of length  $L_{tot}$  comprising a thin-film of high-temperature superconducting material with a critical current density  $J_C$  and an electrical bypass layer in contact with the film, wherein the track (1) consists of a multitude of constrictions (2) having a total length  $L_c$  and each having an approximately constant critical current  $I_{c,c}$  equal to the nominal current  $I_N$  and being separated from each other by connecting sections (3) having a critical current  $I_{c,s}$  larger than  $I_N$ ,  
~~characterized in that wherein~~ the total resistance  $R_c$  of the constrictions (2) at working temperature  $T_N$  is adapted to cause a voltage drop equal to the nominal voltage  $U_N$  at an initial fault current  $I_b$  limited to a value below a prospective fault current.

2. (Currently Amended) The current limiter according to claim 1, ~~characterized in that wherein~~ the resistance  $R_c$  of the constrictions (2) at an initial fault current  $I_b$  with a current density  $J_b$  of approximately 1.5 times  $J_C$  flowing in the constrictions (2) is adapted to cause a voltage drop  $U_c = R_c \times I_b$  equal to the nominal voltage  $U_N$ .

3. (Currently Amended) The current limiter according to claim 2, ~~characterized in that wherein~~ an averaged reduced resistivity  $\rho_c$  of the constrictions (2) at working temperature  $T_N$  and at the initial fault current density  $J_b$  is adapted to limit the surface power density  $p_b$  dissipated by the constrictions (2).

4. (Currently Amended) The current limiter according to claim 3, ~~characterized in that~~   
wherein the averaged reduced resistivity  $\rho_c$  of the constrictions (2) is given by  $\rho_c = \rho_b / J_b^2$  ·  
e, wherein e is the thickness of the superconducting film at the constrictions.

5. (Currently Amended) The current limiter according to claim 4, ~~characterized in that~~   
wherein the conductivity of the bypass layer is higher along the constrictions (2) than along  
the connecting sections (3).

6. (Currently Amended) The current limiter according to ~~one of claims 1 to 4,~~  
~~characterized in that~~ claim 1, wherein the constrictions (2) are divided into two or more paths  
(20) electrically connected in parallel.